

AMENDMENTS TO THE CLAIMS

Claims 1-30 (Cancelled)

31. (New) A high-stability, low emission, fuel emulsion composition for a reciprocating engine comprising:

purified water being substantially 26-50% by weight of said fuel emulsion composition wherein water is a continuous phase of said fuel emulsion;

hydrocarbon petroleum distillate being substantially 43-70% by weight of said fuel emulsion; and

additives being at least 1% by weight of said fuel emulsion wherein said additives including an ignition delay modifier being substantially .1%-.4% by weight of said fuel emulsion wherein said ignition delay modifier improve fuel detonation characteristic of said fuel emulsion and includes Ammonium Nitrate acts as an emulsion stabilizer, and wherein said additives include at least one of a group consisting of:

a surfactant being substantially .3%- 1% by weight of said fuel emulsion wherein said surfactant facilitates formation of a stable emulsion of said hydrocarbon distillate within said continuous phase of water,

a lubricant being .04% to .01 by weight of said emulsion to improve lubricity of said fuel emulsion,

a corrosion inhibitor being substantially .05% by weight of said fuel emulsion,

a neutralizer being substantially .05%-.4% by weight of said fuel emulsion wherein said neutralizer reduces corrosion caused by acids in said fuel emulsion,

biocides being less than .0005% by weight of said fuel emulsion wherein said biocides are an anti-foam agent, and a coupling agent substantially .04%-.1% by weight of said fuel emulsion wherein said coupling agents maintain phase stability of said fuel emulsion at high temperatures and shear pressures.

32. (New) The fuel emulsion of claim 31 wherein said surfactant includes at least one selected from the group consisting of: an alkylphenolethoxylate, an alcohol ethoxylate, a fatty alcohol ethoxylate, and an alkyl amine ethoxylate.

33. (New) The fuel emulsion of claim 32 wherein a selected alkylphenolethoxylate is a polyethoxylated nonylphenol having between 8 and 12 moles of ethylene oxide per mole of nonylphenol.

34. (New) The fuel emulsion of claim 33 wherein said nonylphenol is 2,6,8-Trimethyl-4-nonyloxypolyethyleneoxyethanol.

35. (New) The fuel emulsion of claim 34 wherein said is 2,6,8-Trimethyl-4-nonyloxypolyethyleneoxyethanol is "TERGITOL TMN-10."

36. (New) The fuel emulsion of claim 33 wherein said polyethoxylated nonylphenol is "NP-9EO."

37. (New) The fuel emulsion of claim 36 wherein said "NP-9EO" is added at substantially 1000-3000 ppm.

38. (New) The fuel emulsion of claim 32 wherein a selected alcohol ethoxylate is a C<sub>11</sub> alcohol ethoxylate with 5 moles of ethylene oxide per mole of alcohol.

39. (New) The fuel emulsion of claim 38 wherein said alcohol ethoxylate is “Neodol N1-5 Surfactant.”

40. (New) The fuel emulsion of claim 31 wherein said surfactant is at least one selected from a group consisting of: octylphenoxypolyethoxyethanol added to said fuel emulsion at substantially 100-300 parts per million of said fuel emulsion, octylphenol aromatic ethoxylate added at substantially 1000-3000 parts per million of said fuel emulsion, and ethoxylated alkyl phenol added at substantially 1000-2000 parts per million of said fuel emulsion.

41. (New) The fuel emulsion of claim 31 wherein said lubricant is at least one acid selected from a group consisting of: a mono-acid, a di-acid, and a tri-acid.

42. (New) The fuel emulsion of claim 41 wherein said selected one acid is a one selected from a group consisting of: a phosphoric acid adducted to an organic backbone and a carboxylic acid adducted to an organic backbone.

43. (New) The fuel emulsion of claim 42 wherein said organic backbone includes from about 12 to 22 carbon molecules.

44. (New) The fuel emulsion of claim 42 wherein said selected at least one acid is said phosphoric acid adducted to said organic backbone that includes mixed esters of alkoxylated surfactants in phosphate form.

45. (New) The fuel emulsion of claim 42 wherein said selected at least one acid is said phosphoric acid adducted to said organic backbone that includes a one selected from the group consisting of a di-acid of the Diels-Alder adducts of unsaturated fatty acids and a tri-acid of the Diels-Alder adducts of unsaturated fatty acids.

46. (New) The fuel emulsion of claim 31 wherein said additives includes a neutralizer that is an alkanolamine.

47. (New) The fuel emulsion of claim 46 wherein said alkanolamine includes one selected from a group consisting of: amino methyl propanol, triethanolamine, and diethanolamine.

48. (New) The fuel emulsion of claim 31 wherein said additives include said corrosion inhibitor wherein said corrosion inhibitor is an aminoalkanoic acid.

49. (New) The fuel emulsion of claim 31 wherein said additive includes said ignition delay modifier which includes one selected from a group consisting of a nitrate, a nitrite, and peroxide.

50. (New) The fuel emulsion of claim 31 wherein said additive includes said ignition delay modifier that is 2-ethylhexylnitrate.

51. (New) The fuel emulsion of claim 31 further comprising:  
anti-freeze being substantially 2%-9% by weight of said fuel emulsion.
52. (New) The fuel emulsion of claim 51 wherein said anti-freeze is an organic alcohol.
53. (New) The fuel emulsion of claim 31 wherein said additives include said coupling agent wherein said coupling agent is a one selected from a group consisting of:  
a di-acid of the Diels-Alder adducts of unsaturated fatty acids and a tri-acid of the Diels-Alder adducts of unsaturated fatty acids.